

Listing of the Claims:

1. (Previously Presented) An apparatus for smoothly playing a predetermined sequence of streamed content segments, comprising;

a processor;

a first memory that stores at least one control program usable by the processor to control play of the predetermined sequence of content segments, the at least one control program including computer-readable instructions specifying a number of beginning portions of content segments to cache in advance and size of a pre-buffer cache; and

a second memory which is available to the at least one control program, wherein the apparatus is configured to:

in response to initiation of play of a content segment, initiate downloading to the pre-buffer cache of a beginning portion of each of a number of content segments which are, in the predetermined sequence, subsequent to the playing content segment, wherein the pre-buffer cache is an area of the second memory;

in response to skipping to a target content segment of the predetermined sequence of content segments whose beginning portion has been downloaded to the pre-buffer cache, initiate play of the downloaded beginning portion of the target content segment if less than a preallocated quantity of content segments were previously streamed, during a subscription period, in association with a subscriber; and

while playing the downloaded beginning portion of the target content segment, initiate downloading of the rest of the target content segment.

2. (Previously Presented) The apparatus of claim 1, wherein the beginning portion of the target content segment is approximately the data of the first ten seconds of the target content segment.

3. (Previously Presented) The apparatus of claim 1, wherein the number of beginning portions of content segments to cache in advance is five.

4. (Previously Presented) The apparatus of claim 1, wherein the number of beginning portions of content segments to cache in advance is all content segments in the predetermined sequence of content segments that are subsequent to the playing content segment.

5. (Previously Presented) The apparatus of claim 1, wherein the pre-buffer cache follows a first-in first-out algorithm and allows writing while reading.

6. (Previously Presented) A method for smoothly playing a predetermined sequence of streamed content segments, comprising:

in response to initiation of play of a content segment on a local playback device, downloading, consecutively, a beginning portion of each of a number of content segments which are, in the predetermined sequence, subsequent to the playing content segment, wherein the initiation of play of the content segment is based on whether less than a preallocated quantity of content segments were previously streamed, during a subscription period, in association with a subscriber; and

pre-caching the downloaded beginning portions to a pre-buffer cache of a memory of the local playback device, wherein the number of beginning portions of content segments to pre-cache in advance and size of the pre-buffer cache are specified by a function call.

7. (Previously Presented) The method of claim 6, further comprising:

in response to skipping to a target content segment of the predetermined sequence of content segments, checking whether the beginning portion or the target content segment is in the pre-buffer cache; and

if the beginning portion of the target content segment is in the pre-buffer cache, playing the beginning portion of the target content segment from the pre-buffer cache,

downloading at least a portion of the content segment which is not in the pre-buffer cache, and deleting beginning portions of any content segments prior to the target content segment in the predetermined sequence from the pre-buffer cache.

8. (Previously Presented) The method of claim 7, further comprising:

if the beginning portion of the target content segment is in the pre-buffer cache, downloading, consecutively, a beginning portion of each of a number of content segments which are in the predetermined sequence, subsequent to the target content segment, wherein if beginning portions of the one or more content segments subsequent to the target content segment are already in the pre-buffer cache, skipping the downloading the beginning portions of the one or more content segments already having beginning portions in the pre-buffer cache and downloading the beginning portions of the subsequent content segments such that beginning portions of each of the number of content segments to pre-cache in advance are downloaded to the pre-buffer cache.

9. (Previously Presented) The method of claim 8, further comprising:

if no skip command is received while the target content segment is playing, as the playing of the target content segment ends, playing the content segment immediately subsequent to the target content segment; and

if a skip command is received while the target content segment is playing, checking whether the beginning portion of the content segment immediately subsequent to the target content segment is in the pre-buffer cache.

10. (Previously Presented) The method of claim 7, wherein if the beginning portion of the target content segment is not in the pre-buffer cache, the method further comprises:

sending a request to stop transmitting the playing content segment and to start transmitting the target content segment and at least substantially simultaneously:

deleting the beginning portion of any content segment which is prior to the target content segment in the predetermined sequence of content segments from the pre-buffer cache;

downloading at least a remaining portion of the target content segment;
and

begin playing the target content segment when a sufficient portion of the target content segment has been downloaded.

11. (Previously Presented) The method of claim 10, further comprising:

if playback is skipped from the target content segment to another target content segment, checking whether the beginning portion of the other target content segment is in the pre-buffer cache; and

if playback is not skipped from the target content segment, playing the beginning portion of content segment subsequent to the target content segment after the end of the target content segment is played and downloading at least a portion of the target content segment which is not in the pre-buffer cache, wherein if beginning portions of the one or more content segments subsequent to content segments in the predetermined sequence of content segments are already in the pre-buffer cache, skipping the downloading of the beginning portions of the one or more content segments already having beginning portions in the pre-buffer cache and downloading the beginning portions of the subsequent content segments such that beginning portions of each of the number of content segments to pre-cache in advance are downloaded to the pre-buffer cache.

12. (Previously Presented) The method of claim 6, wherein the beginning portion of the target content segment is approximately the data of the first ten seconds of the target content segment.

13. (Previously Presented) The method of claim 6, wherein the number of beginning portions of content segments to cache in advance is five.

14. (Previously Presented) The method of claim 6, wherein the number of beginning portions of content segments to cache in advance is all content segments in the predetermined sequence of content segments that are subsequent to the playing content segment.

15. (Previously Presented) The method of claim 6, wherein the pre-buffer cache follows a first-in first-out algorithm and allows writing while reading.

16. (Previously Presented) A computer-readable storage medium having instructions stored thereon that, if executed by a computing device, cause the computing device to perform operations which play a predetermined sequence of streamed content segments, the operations comprising:

in response to initiation of play of a content segment on the computing device, downloading a beginning portion of each of a number of content segments which are, in the predetermined sequence, subsequent to the playing content segment, wherein the initiation of play of the content segment is based on whether less than a preallocated quantity of content segments were previously streamed, during a subscription period, in association with a subscriber; and

pre-caching the downloaded beginning portions to a pre-buffer cache of a memory of the computing device, wherein the number of beginning portions of content segments to pre-cache in advance and size of the pre-buffer cache are specified by a function call.

17. (Currently Amended) The computer-readable storage medium of claim 16, wherein the operations further comprise:

in response to skipping to a target content segment of the predetermined sequence of content segments, checking whether the beginning portion of the target content segment is in the pre-buffer cache; and

~~If the beginning~~ if the beginning portion of the target content segment is in the pre-buffer cache, playing the beginning portion of the target content segment from the

pre-buffer cache, downloading at least a portion of the target content segment which is not in the pre-buffer cache, and deleting beginning portions of any content segments prior to the target content segment in the predetermined sequence from the pre-buffer cache.

18. (Previously Presented) The computer-readable storage medium of claim 17, wherein the operations further comprise:

if the beginning portion of the target content segment is in the pre-buffer cache, downloading a beginning portion each a numbers of content segments which are, in the predetermined sequence, subsequent to the target content segment, wherein if beginning portions of the one or more content segments subsequent to the target content segment are already in the pre-buffer cache, skipping the downloading of the beginning portions of the one or more content segments already having beginning portions in the pre-buffer cache and downloading the beginning portions of the subsequent content segments such that beginning portions of each of the number of content segments to pre-cache in advance are downloaded to the pre-buffer cache.

19. (Previously Presented) The computer-readable storage medium of claim 18, wherein the operations further comprise:

if no skip command is received while the target content segment is playing, as the playing of the target content segment ends, playing the content segment immediately subsequent to the target content segment; and

if a skip command is received while the target content segment is playing, checking whether the beginning portion of the content segment immediately subsequent the target content segment is in the pre-buffer cache.

20. (Previously Presented) The computer-readable storage medium of claim 17, wherein if the beginning portion of the target content segment is not in the pre-buffer cache, the operations further comprise:

 sending a request to stop transmitting the playing content segment and to start transmitting the target content segment, and at least substantially simultaneously:

 deleting the beginning portion of any content segment which is prior to the target content segment in the predetermined sequence of content segments from the pre-buffer cache;

 downloading at least a remaining portion of the target content segment;
and

 begin playing the target content segment after a sufficient portion of the target content segment has been downloaded.

21. (Currently Amended) The computer-readable storage medium of claim 20, further comprise:

~~if playback~~ if playback is skipped from the target content segment to another target content segment, checking whether the beginning portion of the other target content segment is in the pre-buffer cache; and

 if playback is not skipped from the target content segment, playing the beginning portion of the content segment subsequent to the target content segment after the end of the target content segment is played, downloading at least a portion of the target content segment which is not in the pre-buffer cache, wherein if beginning portions of the one or more content segments subsequent to content segments in the predetermined sequence are already in the pre-buffer cache, skipping the downloading of the beginning portions of one or more content segments already having beginning portions in the pre-buffer cache and downloading the beginning portions of the subsequent content segments such that beginning portions of each of the number of content segments to cache in advance are downloaded to the pre-buffer cache.

22. (Previously Presented) The computer-readable storage medium of claim 16, wherein the beginning portion of the target content segment is approximately the data of the first ten seconds of the target content segment.

23. (Previously Presented) The computer-readable storage medium of claim 16, wherein the number of beginning portions of content segments to cache in advance is five.

24. (Previously Presented) The computer-readable storage medium of claim 16, wherein the number of beginning portions of content segments to cache in advance is all content segments in the predetermined sequence of content segments that are subsequent to the playing content segment.

25. (Previously Presented) The computer-readable storage medium of claim 16, wherein the pre-buffer cache follows a first-in first-out algorithm and allows writing while reading.

26. (Previously Presented) An apparatus for smoothly playing a predetermined sequence of streamed content segments, comprising:

means for controlling the playback of a predetermined sequence of content segments based on whether less than a preallocated quantity of content segments were previously streamed, during a subscription period, in association with a subscriber;

means for pre-downloading a beginning portion of a number of content segments from the predetermined sequence of content segments; and

means for caching the pre-downloaded beginning portions, wherein the number of beginning portions to be pre-downloaded is configurable via a function call.